

## **Silicon Earth – Introduction to the Microelectronics and Nanotechnology Revolution**

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We are in the swirling center of the most life-changing technological revolution the Earth has ever known. In only 60 years, a blink of the eye in human history, a single technological invention has launched the mythical thousand ships, producing the most sweeping and pervasive set of changes ever to wash over humankind; changes that are reshaping the very core of human existence, on a global scale, and at a relentlessly accelerating pace. And we are just at the very beginning. *Silicon Earth* introduces readers with little or no technical background to the many marvels of microelectronics and nanotechnology, using easy, nonintimidating language and an intuitive approach with minimal math. The general scientific and engineering underpinnings of microelectronics and nanotechnology are addressed, as well as how this new technological revolution is transforming a broad array of interdisciplinary fields, and civilization as a whole. Special "wadget deconstruction" chapters address the inner workings of ubiquitous micro- or nano-enabled pieces of technology such as cell phones, flash drives, GPS, DVDs, and digital cameras.

John D. Cressler is the Ken Byers Professor of Electrical and Computer Engineering at The Georgia Institute of Technology. He received his Ph.D. in applied physics from Columbia University in 1990. After working on the research staff at the IBM Thomas J. Watson Research Center for eight years, he began his academic career at Auburn University in 1992 and then joined the faculty at Georgia Tech in 2002. His research interests center on developing blindingly fast, next-generation electronic components using silicon-based heterostructure devices and circuits. He and his research team have published more than 450 scientific papers in this area. He has served as Associate Editor for three IEEE journals and on numerous conference program committees. He is a Fellow of the IEEE and was awarded the C. Holmes MacDonald National Outstanding Teacher Award (Eta Kappa Nu, 1996), the IEEE Third Millennium Medal (2000), the Office of Naval Research Young Investigator Award (1994), the Birdsong Merit Teaching Award (1998), and the Outstanding Faculty Leadership for the Development of Graduate Research Assistants Award (2007). His previous books include *Silicon-Germanium Heterojunction Bipolar Transistors* (2003), *Reinventing Teenagers: The Gentle Art of Instilling Character in Our Young People* (2004), and *Silicon Heterostructure Handbook: Materials, Fabrication, Devices, Circuits, and Applications of SiGe and Si Strained-Layer Epitaxy* (2006). He is an avid hiker, gardener, and wine collector.